

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 311

PARTICULATE MATTER FROM PROCESS INDUSTRIES

INDEX

SECTION 100 - GENERAL

- 101 PURPOSE
- 102 APPLICABILITY

SECTION 200 - DEFINITIONS

- 201 AFFECTED OPERATION
- 202 APPROVED EMISSION CONTROL SYSTEM
- 203 PARTICULATE MATTER
- 204 PARTICULATE MATTER EMISSIONS
- 205 PROCESS WEIGHT
- 206 PROCESS WEIGHT RATE
- 207 UNCOMBINED WATER

SECTION 300 - STANDARDS

- 301 LIMITATIONS - PROCESS INDUSTRIES
- 302 APPLICABILITY OF EMISSION LIMITS FOR COMBINED EMISSIONS FROM SIMILAR OPERATIONS
- 303 LIMITATIONS - PORTLAND CEMENT PLANTS
- 304 LIMITATIONS - FUEL BURNING EQUIPMENT
- 305 APPROVED EMISSION CONTROL SYSTEM REQUIRED
- 306 OPERATION AND MAINTENANCE (O&M) PLAN REQUIRED
- 307 EXEMPTIONS

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE - O&M PLAN

SECTION 500 - MONITORING AND RECORDS

501 PROVIDING AND MAINTAINING RECORDS

502 RECORD KEEPING AND REPORTING

503 RECORD RETENTION

504 TEST METHODS

**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 311
PARTICULATE MATTER FROM PROCESS INDUSTRIES**

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the discharge of particulate matter into the atmosphere by establishing emission rates based on process weight.
- 102 APPLICABILITY:** This rule shall apply to any affected operation which is not subject to the provisions of Rule 316 of these Regulations.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201 AFFECTED OPERATION** - An operation that emits particulate matter into the ambient air as a result of processing materials.
- 202 APPROVED EMISSION CONTROL SYSTEM** - A system for reducing particulate matter emissions, consisting of collection and/or control devices which are approved in writing by the Control Officer and are designed and operated in accordance with good engineering practice.
- 203 PARTICULATE MATTER** - Any material, except uncombined water, which has a nominal aerodynamic diameter smaller than 100 microns (micrometers), and which exists in a finely divided form as a liquid or solid at actual conditions.
- 204 PARTICULATE MATTER EMISSIONS** - Any and all finely divided solid or liquid materials other than uncombined water, emitted to the ambient air as measured by applicable state and federal test methods.
- 205 PROCESS WEIGHT** - The total weight of all materials introduced into an operation, excluding liquids and gases used solely as fuels, air which is not consumed as a reactant, and combustion air.

206 PROCESS WEIGHT RATE - A rate established as follows:

- 206.1** For continuous or long-run steady-state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof.
- 206.2** For cyclical or batch operations, the total process weight for a period which covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such period.

207 UNCOMBINED WATER - Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

SECTION 300 - STANDARDS

301 LIMITATIONS - PROCESS INDUSTRIES: No person shall discharge or cause or allow the discharge of particulate matter emissions into the ambient air from any affected operation in excess of the allowable hourly emission rate determined by the following equations:

301.1 Process Weight Rates Less Than or Equal to 60,000 Pounds Per Hour:
Determination of the allowable hourly emission rates (E) for process weight rates up to 60,000 lbs/hr shall be accomplished by use of the equation:

$$E = 3.59 P^{0.62} \text{ (P = less than or equal to 30 tons/hr)}$$

where:

E = Emissions in pounds per hour, and

P = Process weight rate in tons per hour.

301.2 Process Weight Rates Greater Than 60,000 Pounds Per Hour:
Determination of the allowable hourly emission rates (E) for process weight rates in excess of 60,000 lbs/hr shall be accomplished by the use of the equation:

$$E = 17.31 P^{0.16} \text{ (P = greater than 30 tons/hr)}$$

where "E" and "P" have the same meanings as in Section 301.1 of this rule.

302 APPLICABILITY OF EMISSION LIMITS FOR COMBINED EMISSIONS FROM SIMILAR OPERATIONS: The total process weight from all similar operations at a facility, plant or premises shall be used for determining the maximum allowable emissions of particulate matter.

303 LIMITATIONS - PORTLAND CEMENT PLANTS:

303.1 No person owning or operating a portland cement plant with a process weight rate in excess of 250,000 lbs/hr shall discharge or cause or allow the discharge of particulate matter emissions from any kiln into the ambient air which is in excess of 0.3 lbs/ton (0.15 kg per metric ton) of feed to the kiln, maximum two-hour average, or greater than ten percent opacity.

303.2 No person owning or operating a portland cement plant shall discharge or cause or allow the discharge of particulate matter emissions from the clinker cooler into the ambient air in excess of 0.1 lb/ton (0.05 kg per metric ton) of feed to the kiln, maximum two hour average, or greater than ten percent opacity.

303.3 No person owning or operating a portland cement plant shall discharge or cause or allow the discharge into the ambient air of particulate matter emissions from any affected facility, other than the kiln or clinker cooler, which is greater than ten percent opacity.

304 LIMITATIONS - FUEL BURNING EQUIPMENT: No person shall discharge, cause or allow the discharge of particulate matter emissions, caused by combustion of fuel, from any fuel burning operation in excess of amounts calculated by the equations presented in Sections 304.1 and 304.2 of this rule.

304.1 For equipment having a heat input rating of 4200 million btu/hr or less, the maximum allowable emissions (E) shall be determined by the following equation:

$$E = 1.02 Q^{0.769}$$

where:

E = The maximum allowable particulate emission rate in pounds-mass per hour, and

Q = The heat output in million BTU per hour.

- 304.2** For equipment having a heat input rating greater than 4200 million BTU/hr, the maximum allowable emissions shall be determined by the following equation:

$$E = 17.0 Q^{0.432}$$

where "E" and "Q" have the same meanings as in Section 304.1 of this rule.

- 305 APPROVED EMISSION CONTROL SYSTEM REQUIRED:** For affected operations which may exceed the applicable standards set forth in Sections 301 through 304 of this rule, an owner or operator may comply by installing and operating an approved emission control system.
- 306 OPERATION AND MAINTENANCE (O&M) PLAN REQUIRED:** No person required to use an approved emission control system to reduce emissions as specified in the conditions of a valid permit in accordance with this rule shall do so without complying with an operation and maintenance plan that has been approved by the Control Officer. This plan shall specify key system operating parameters such as temperatures, transfer rates, pressures and/or flow rates necessary to determine compliance with this rule and describe in detail procedures to maintain the approved emission control system. The Control Officer's written approval of this plan shall be required for compliance with this rule to be achieved.
- 307 EXEMPTIONS:** The provisions of Section 301 of this rule shall not apply to incinerators or fuel burning facilities. The provisions of Section 301 of this rule shall not apply to portland cement plants having process weights in excess of 250,000 lb/hr.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

- 401 COMPLIANCE SCHEDULE - OPERATION AND MAINTENANCE (O&M) PLAN:** Any person employing an approved emission control system on the effective date of this rule shall by December 1, 1993, file an O&M Plan with the Control Officer in accordance with Section 501 of this rule.

SECTION 500 - MONITORING AND RECORDS

- 501 PROVIDING AND MAINTAINING MONITORING DEVICES:** No person required to use an approved emission control system to control particulate emissions pursuant to this rule shall do so without first providing, properly installing, operating and maintaining in calibration and in good working order devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions

necessary to determine if air pollution control equipment is functioning properly and is properly maintained as described in an approved O&M Plan.

502 RECORDKEEPING AND REPORTING: Any person subject to this rule shall comply with the following requirements. Any records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer or his designee upon request.

502.1 De Minimis Limitation for Affected Operations Requiring Records: No person responsible for the operation of any particulate-emitting affected operation which processes more than 50 pounds of material daily shall conduct such operations unless detailed daily records are maintained.

502.2 Minimum Recordkeeping Required: These records shall be updated each day of operation and include at a minimum the following information: a record of the total weight of all process materials including raw materials, additives, fuels, etc., which are put into a process flow at the beginning of each batch process shall be kept on site. This shall include all materials which participate in the process and are changed in mass, form, state or in other characteristics by means of their interaction in the given process. The duration of each separate batch process shall also be recorded.

a. Batch process records: Maintain a record of the total weight of all process materials including raw materials, additives, and fuels which are put into a process flow at the beginning of each batch process shall be kept. This shall include all materials which participate in the process and are changed in mass, form, state or in other characteristics by means of their interaction in the given process. The duration of each separate batch process shall also be recorded.

b. Continuous or semi-continuous process records: Maintain a daily record of the weight of all process material entering into each process including raw materials, additives, fuels, the start time and the duration of each process run. In addition to the foregoing, records shall be kept for processes which run continuously for more than 24 hours. Such records shall include the total weight of any material entering into the process over the entire duration of the process run from start up to shut down and the total elapsed time of operation.

502.3 Operation and Maintenance: Maintain a continuous record of the periods of time an approved emission control system is used to comply with this rule and maintain daily records of the Operation and Maintenance Plan's key system operating parameters. The records shall account for any periods of

production when the control system was not operating and maintain records of all maintenance performed according to the O&M Plan.

- 503 RECORD RETENTION:** Copies of reports, logs and supporting documentation required by the Control Officer shall be retained at least three years. Records and information required by this rule shall also be retained for at least three years.
- 504 TEST METHODS:** The reference methods in 40 CFR 60, Appendix A, shall be used to determine compliance with the pertinent standards prescribed in this section. When more than one test method is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation of this rule.
- 504.1** Sample velocity and velocity traverse and selection of sample sites and sample traverses shall be determined according to EPA Reference Method 1.
- 504.2** Velocity and volumetric flow rate shall be determined according to EPA Reference Method 2.
- 504.3** Gas analysis shall be determined according to EPA Reference Method 3.
- 504.4** Stack gas moisture shall be determined according to EPA Reference Method 4.
- 504.5** Stack effluent concentration of particulate matter and associated moisture content shall be determined according to EPA Reference Method 5.
- 504.6** Visible emissions shall be determined according to EPA Reference Method 9.

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